

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of )  
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RODNEY WILLIAM VANSTONE, et al. ) Group Art Unit: Unassigned  
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Application No.: Unassigned ) Examiner: Unassigned  
 )  
Filed: February 11, 2002 )  
 )  
For: ROTOR AND METHOD FOR )  
 WELDING AN ELEMENT OF A )  
 ROTOR )

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination of the above-captioned patent application, applicants request that the following claim amendments be entered. No new matter has been introduced in these amendments.

**IN THE CLAIMS:**

Please replace Claims 3-15 and 18-26 as follows.

3. (Amended) A method according to Claim 1, wherein the said weld metal comprises at least 0.3% manganese.
4. (Amended) A method according to Claim 1, wherein the said weld metal comprises 0.005% or less sulphur.
5. (Amended) A method according to Claim 1, wherein the said weld metal comprises at least 1.7% tungsten.

6. (Amended) A method according to Claim 1, wherein the said weld metal comprises at least 0.04% niobium.
7. (Amended) A method according to Claim 1, wherein the said weld metal comprises 0.02% or less nitrogen.
8. (Amended) A method according to Claim 1, wherein the said weld metal further comprises 0.5% or less nickel.
9. (Amended) A method according to Claim 1, wherein the said weld metal comprises substantially 0.075% carbon, 0.2% silicon, 0.5% manganese, 0.001% sulphur, 0.017% phosphorous, 2.2% chromium, 0.1% molybdenum, 0.1% nickel, 0.23% vanadium, 0.06% niobium, 0.05% titanium, 1.9% tungsten, 0.009% nitrogen, 0.003% boron and 0.02% aluminium.
10. (Amended) A method according to Claim 1, wherein the rotor element is formed from steel which comprises from 0.15 to 0.35% carbon, from 0 to 0.3% silicon, from 0.2 to 1% manganese, from 0 to 0.03% sulphur, from 0 to 0.03% phosphorous, from 0.3 to 1% nickel, from 0.7 to 1.50% chromium, from 0.5 to 1.2 % molybdenum, and from 0.2 to 0.4% vanadium.
11. (Amended) A method according to Claim 1, wherein the rotor element is formed from steel comprising substantially 0.25% carbon, 0.23% silicon, 0.64% manganese, 0.005% sulphur, 0.01% phosphorous, 0.56% nickel, 0.8% chromium, 0.78% molybdenum, and 0.35% vanadium.
12. (Amended) A method according to Claim 1, comprising providing a second rotor element having a composition substantially the same as the said rotor element and welding the said second rotor element to the said rotor element using the said weld metal.

13. (Amended) A method according to Claim 1, wherein the said welding process is a submerged-arc welding process.
14. (Amended) A method according to Claim 1, wherein the said method comprises a step of machining a rotor component to form at least one of the said rotor elements.
15. (Amended) A method according to Claim 1, comprising a step of machining the said weld metal after the weld has been formed.
18. (Amended) A rotor according to Claim 16, wherein the said weld metal comprises at least 0.3% manganese.
19. (Amended) A rotor according to Claim 16, wherein the said weld metal comprises 0.005% or less sulphur.
20. (Amended) A rotor according to Claim 16, wherein the said weld metal comprises at least 1.7% tungsten.
21. (Amended) A rotor according to Claim 16, wherein the said weld metal comprises at least 0.04% niobium.
22. (Amended) A rotor according to Claim 16, wherein the said weld metal comprises 0.02% or less nitrogen.
23. (Amended) A rotor according to Claim 16, wherein the said weld metal further comprises 0.5% or less nickel.
24. (Amended) A rotor according to Claim 16, wherein the said weld metal comprises substantially 0.075% carbon, 0.2% silicon, 0.5% manganese, 0.001% sulphur, 0.017%

phosphorous, 2.2% chromium, 0.1% molybdenum, 0.1% nickel, 0.23% vanadium, 0.06% niobium, 0.05% titanium, 1.9% tungsten, 0.009% nitrogen, 0.003% boron and 0.02% aluminium.

25. (Amended) A rotor according to Claim 16, wherein the rotor element is formed from steel which comprises from 0.15 to 0.35% carbon, from 0 to 0.3% silicon, from 0.2 to 1% manganese, from 0 to 0.03% sulphur, from 0 to 0.03% phosphorous, from 0.3 to 1% nickel, from 0.7 to 1.50% chromium, from 0.5 to 1.2 % molybdenum, and from 0.2 to 0.4% vanadium.

26. (Amended) A rotor according to Claim 16, wherein the rotor element is formed from steel comprising substantially 0.25% carbon, 0.23% silicon, 0.64% manganese, 0.005% sulphur, 0.01% phosphorous, 0.56% nickel, 0.8% chromium, 0.78% molybdenum, and 0.35% vanadium.

**REMARKS**

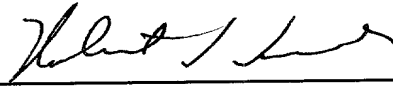
By way of the foregoing amendments to the claims, Claims 3-15 and 18-26 have been amended to delete the multiple dependencies. These changes have been made in accordance with 37 C.F.R. § 1.121 as amended on November 7, 2000. Marked-up versions of Claims 3-15 and 18-26 indicating the changes accompany this Preliminary Amendment.

Early and favorable consideration with respect to this application is respectfully requested.

Should any questions arise in connection with this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: \_\_\_\_\_

  
Robert S. Swecker  
Registration No. 19,885

P. O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

Date: February 11, 2002

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**Marked-up Claims 3-15 and 18-26**

3. (Amended) A method according to Claim 1 [or 2], wherein the said weld metal comprises at least 0.3% manganese.
4. (Amended) A method according to [any preceding claim] Claim 1, wherein the said weld metal comprises 0.005% or less sulphur.
5. (Amended) A method according to [any preceding claim] Claim 1, wherein the said weld metal comprises at least 1.7% tungsten.
6. (Amended) A method according to [any preceding claim] Claim 1, wherein the said weld metal comprises at least 0.04% niobium.
7. (Amended) A method according to [any preceding claim] Claim 1, wherein the said weld metal comprises 0.02% or less nitrogen.
8. (Amended) A method according to [any preceding claim] Claim 1, wherein the said weld metal further comprises 0.5% or less nickel.
9. (Amended) A method according to [any preceding claim] Claim 1, wherein the said weld metal comprises substantially 0.075% carbon, 0.2% silicon, 0.5% manganese, 0.001% sulphur, 0.017% phosphorous, 2.2% chromium, 0.1% molybdenum, 0.1% nickel, 0.23% vanadium, 0.06% niobium, 0.05% titanium, 1.9% tungsten, 0.009% nitrogen, 0.003% boron and 0.02% aluminium.
10. (Amended) A method according to [any preceding claim] Claim 1, wherein the rotor element is formed from steel which comprises from 0.15 to 0.35% carbon, from 0 to 0.3% silicon, from 0.2 to 1% manganese, from 0 to 0.03% sulphur, from 0 to 0.03% phosphorous, from 0.3

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**Marked-up Claims 3-15 and 18-26**

to 1% nickel, from 0.7 to 1.50% chromium, from 0.5 to 1.2 % molybdenum, and from 0.2 to 0.4% vanadium.

11. (Amended) A method according to [any preceding claim] Claim 1, wherein the rotor element is formed from steel comprising substantially 0.25% carbon, 0.23% silicon, 0.64% manganese, 0.005% sulphur, 0.01% phosphorous, 0.56% nickel, 0.8% chromium, 0.78% molybdenum, and 0.35% vanadium.

12. (Amended) A method according to [any preceding claim] Claim 1, comprising providing a second rotor element having a composition substantially the same as the said rotor element and welding the said second rotor element to the said rotor element using the said weld metal.

13. (Amended) A method according to [any preceding claim] Claim 1, wherein the said welding process is a submerged-arc welding process.

14. (Amended) A method according to [any preceding claim] Claim 1, wherein the said method comprises a step of machining a rotor component to form at least one of the said rotor elements.

15. (Amended) A method according to [any preceding claim] Claim 1, comprising a step of machining the said weld metal after the weld has been formed.

18. (Amended) A rotor according to Claim 16 [or 17], wherein the said weld metal comprises at least 0.3% manganese.

19. (Amended) A rotor according to [any of Claims 16 to 18] Claim 16, wherein the said weld metal comprises 0.005% or less sulphur.

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**Marked-up Claims 3-15 and 18-26**

20. (Amended) A rotor according to [any of Claims 16 to 19] Claim 16, wherein the said weld metal comprises at least 1.7% tungsten.
21. (Amended) A rotor according to [any of Claims 16 to 20] Claim 16, wherein the said weld metal comprises at least 0.04% niobium.
22. (Amended) A rotor according to [any of Claims 16 to 21] Claim 16, wherein the said weld metal comprises 0.02% or less nitrogen.
23. (Amended) A rotor according to [any of Claims 16 to 22] Claim 16, wherein the said weld metal further comprises 0.5% or less nickel.
24. (Amended) A rotor according to [any of Claims 16 to 23] Claim 16, wherein the said weld metal comprises substantially 0.075% carbon, 0.2% silicon, 0.5% manganese, 0.001% sulphur, 0.017% phosphorous, 2.2% chromium, 0.1% molybdenum, 0.1% nickel, 0.23% vanadium, 0.06% niobium, 0.05% titanium, 1.9% tungsten, 0.009% nitrogen, 0.003% boron and 0.02% aluminium.
25. (Amended) A rotor according to [any of Claims 16 to 24] Claim 16, wherein the rotor element is formed from steel which comprises from 0.15 to 0.35% carbon, from 0 to 0.3% silicon, from 0.2 to 1% manganese, from 0 to 0.03% sulphur, from 0 to 0.03% phosphorous, from 0.3 to 1% nickel, from 0.7 to 1.50% chromium, from 0.5 to 1.2 % molybdenum, and from 0.2 to 0.4% vanadium.
26. (Amended) A rotor according to [any of Claims 16 to 25] Claim 16, wherein the rotor element is formed from steel comprising substantially 0.25% carbon, 0.23% silicon, 0.64%



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**Marked-up Claims 3-15 and 18-26**

manganese, 0.005% sulphur, 0.01% phosphorous, 0.56% nickel, 0.8% chromium, 0.78% molybdenum, and 0.35% vanadium.